

CLAIM AMENDMENTS:

Please amend Claim 1 as shown and add new Claims 2-10.

5 1. (Amended Once) In a blown film extrusion apparatus in which film is extruded as a tube from an annular die and then pulled along a predetermined path and located within an adjustable sizing cage, an apparatus for startup of said extruded film tube, comprising:

10 (a) means for varying a quantity of air within said extruded film tube, including:

 (1) a supply blower which supplies air to said extruded film tube in an amount corresponding to a supply control signal, and

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 (2) an exhaust blower which exhausts air from said extruded film tube in an amount corresponding to an exhaust control signal;

20 (b) a controller member including executable program instructions which define at least one control routine for automatic and coordinated control of said means for varying during starting of said extruded film tube by directing a series of supply control signals to said supply blower and exhaust control signals to said exhaust blower.

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 (c) a sizing cage subsystem surrounding said extruded film tube and including an electrically-actuable and controllable actuator for moving said sizing cage inward and outward relative to said extruded film tube;

(d) at least one non-contact sensor for measuring a sensor-to-tube distance;

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(e) wherein said executable program instructions include a cage position control routine which utilizes said sensor-to-tube distance to calculate a location of said sizing cage subsystem.

2. (New) An apparatus for startup of an extruded film tube, according to Claim 1, further comprising:

5 (f) wherein said at least one non-contact sensor comprises a pair of non-contact sensors located on opposite sides of said sizing cage subsystem.

3. (New) An apparatus for startup of an extruded film tube, according to Claim 1, further comprising:

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(f) wherein said at least one non-contact sensor comprises at least one acoustic sensor.

4. (New) An apparatus for startup of an extruded film tube, according to Claim 1, further comprising:

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(f) wherein in said executable program instructions include a useful range determination routine which prompts user activity and which determines empirically a useful range of positions for said sizing cage subsystem.

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5. (New) An apparatus for startup of an extruded film tube, according to Claim 4, further comprising:

(f) wherein said useful range determination routine operates by:

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(1) prompting a user to move said sizing cage subsystem to its outer maximum position and reading sensor data from said at least one non-contact sensor;

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(2) prompting a user to move said sizing cage to its inner position and reading sensor data from said at least one non-contact sensor.

6. (New) An apparatus for startup of an extruded film tube, according to Claim 1, further comprising:

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(f) wherein said cage position control routine further includes a cage positioning routine which utilizes said electrically-actuable and controllable actuator to reposition said sizing cage subsystem in response to a predetermined set point.

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7. (New) An apparatus for startup of an extruded film tube, according to Claim 6, further comprising:

(f) wherein said cage position control routine includes at least the following two modes of operation:

(1) a forecast mode of operation wherein said sizing cage subsystem is located a relatively large distance from said predetermined set point; and

(2) a contact mode of operation wherein said sizing cage subsystem is located a relatively small distance from said predetermined set point.

8. (New) An apparatus for startup of an extruded film tube, according to Claim 7, further comprising:

(g) wherein during said forecast mode of operation, control signals are supplied to said controller by said cage position control routine which cause a movement of said sizing cage subsystem through a series of steps.

9. (New) An apparatus for startup of an extruded film tube, according to Claim 7, further comprising:

5 (h) wherein during said contact mode of operation, a user is prompted to introduce slight overage or underage values to said extruded film tube in order to slightly move said sizing cage subsystem inward or outward to over-squeeze or under-squeeze said extruded film tube.

10 10. (New) An apparatus for startup of an extruded film tube, according to Claim 8, further comprising:

15 (f) wherein said blown film extrusion apparatus includes a lay-flat control system which provides a control system for monitoring and adjusting a finished product diameter for said extruded film tube; and

20 (g) wherein during said forecast mode of operation, control signals are supplied to said controller by said cage position control routine to said layflat control system which are inaccurate measurements of said finished product diameter for said extruded film tube, causing said layflat control system to predominantly control said sizing cage subsystem.